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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Shun-An Chen

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02/24/2005

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EXAMINER

SUN, XIUQIN

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/930,971

Applicant(s)

CHEN ET AL.

Examiner

Xiuqin Sun

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 7-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pasadyn et al. (U.S. Pat. No. 6442496) in view of Nara et al. (U.S. Pat. No. 6388747 B2).

Pasadyn et al. teach a system, method and apparatus for dynamically monitoring stability of manufacturing equipment (see abstract; col. 2, lines 39-67; col. 3, lines 1-5 and lines 64-67 and col. 4, lines 1-10), comprising: a process executor requesting a plurality of semi-manufactured products processed by the manufacturing equipment to be inspected at a first sampling rate and receiving a plurality of inspection results, wherein the process executor is a Manufacturing Executive System (Figs. 1-3; col. 2, lines 39-67; col. 3, lines 1-5; col. 5, lines 54-67 and col. 6, lines 1-14); a data processor analyzing the inspection results to determine a second sampling rate (Figs. 2 and 3; col. 2, lines 39-67; col. 3, lines 1-5; col. 4, lines 64-67; col. 5, lines 1-19; col. 6, lines 15-67; col. 7, lines 1-26 and lines 62-67 and col. 8, lines 1-20); a device storing the second sampling rate (Fig. 1; col. 4, lines 64-67; col. 5, lines 1-19; col. 6, lines 15-67 and col. 7,

lines 1-26); a controller receiving said second sampling rate from the storage device and changing said first sampling rate of the inspection requested by the process controller to said second sampling rate (col. 6, lines 15-67; col. 7, lines 1-26 and 62-67; col. 8, lines 1-20 and lines 40-56). Pasadyn et al. further teach: an input device connected to the storage device for inputting of user-defined data (Fig. 1 and col. 4, lines 11-33); the inspection of the semi-manufacturing products is non-destructive (col. 2, lines 20-32 and col. 5, lines 32-53); a semiconductor manufacturing process that is capable of etching the semi-manufactured products such as a wafer and a technique for forming an oxide layer on the semi-manufactured products (col. 1, lines 20-48; col. 3, lines 64-67; col. 4, lines 1-10 and lines 33-45); one of the inspection results is a thickness of an oxide layer (col. 7, lines 42-67 and col. 8, lines 1-20); one of the inspection results is an etching depth (col. 1, lines 20-48; col. 7, lines 42-67 and col. 8, lines 1-20 ); said controller is a server (Fig. 1).

Pasadyn et al. do not mention explicitly: said input device connected to the storage device for inputting of a user-defined sampling rate; and a display connected to the storage device, displaying the first and the second sampling rates.

Nara et al. disclose a inspection method, apparatus and system for circuit pattern, and teach: a process executor for requesting a plurality of semi-manufactured products processed by a semiconductor manufacturing equipment to be inspected at a given sampling rate and receiving a plurality of inspection results (see Figs. 2 and 4; col. 8, lines 45-67; col. 9, lines 1-7, lines 37-50; col. 10, lines 62-67; col. 11, lines 1-17; col. 28, lines 58-67 and col. 42, lines 14-24). Nara et al. further teach: an input device

connected to the storage device for inputting of a user-defined sampling rate (col. 28, lines 31-41 and lines 58-63); and a display connected to the storage device, displaying the sampling rate for the inspection process (see Fig. 25 and col. 28, lines 27-41).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teachings of Nara process executor, sampling rate input means and the display means in the Pasadyn system and method in order to provide a mechanism for manually controlling the sampling frequency and data processing in parallel with the automatic execution of the inspecting process (Nara, col. 2, lines 53-65; col. 28, lines 31-41 and lines 58-63), and displaying the results in a user-friendly GUI format (Fig. 25).

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable Pasadyn et al. (U.S. Pat. No. 6442496) in view of Nara et al. (U.S. Pat. No. 6388747 B2), as applied to claim 1 above, and further in view of Hinkle (U.S. Pat. No. 6190313).

Pasadyn et al. and Nara et al. teach a method and system that includes the subject matter discussed above. Pasadyn et al. and Nara et al. do not mention explicitly that the data processor is an SPC analyzing software application.

Hinkle teaches an Statistical Process Control (SPC) analyzing software application used as a data processor in processing and analyzing the data in question (see abstract; col. 2, lines 59-61 and col. 3, lines 49-61)

It would have been obvious to include the teaching of the Hinkle SPC analyzer in the combination of Pasadyn and Nara in order to perform an SPC analysis on the indexed data records (Hinkle, abstract).

***Response to Arguments***

4. Applicants' arguments received 12/29/2004 with respect to claims 1-5 and 7-13 have been considered but are moot in view of the new ground(s) of rejection.

Claims 1-5 and 7-13 are rejected as new art (U.S. Pat. No. 6442496 to Pasadyn et al.) has been found to teach the limitation of argued by the Applicants. Detailed response is given in section 2 set forth above in this Office Action.

***Prior Art Citations***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1) Higuchi (U.S. Pat. No. 5790400) is entitled to "Object inspection apparatus".

2) Ogata et al. (U.S. Pat. No. 6281962) is entitled to "Processing apparatus for coating substrate with resist and developing exposed resist including inspection equipment for inspecting substrate and processing method thereof".

3) Levy et al. (U.S. Pub. No. 20040235205) is entitled to "Methods and systems for determining a critical dimension and overlay of a specimen".

4) Naruoka (U.S. Pat. No. 6300147) disclose a method and system of inspecting semiconductor substrate.

5) Takagi et al. (U.S. Pub. No. 20010020194) disclose a method and system for

manufacturing semiconductor devices, and method and system for inspecting semiconductor devices.

6) Morioka et al. (U.S. Pat. No. 5274434) disclose a method and apparatus for inspecting foreign particles on real time basis in semiconductor mass production line.

***Contact Information***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiuqin Sun whose telephone number is (571)272-2280. The examiner can normally be reached on 6:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571)272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Xiuqin Sun  
Examiner  
Art Unit 2863

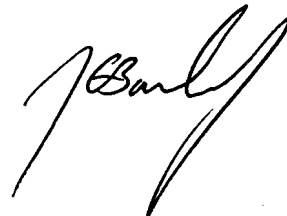
Application/Control Number: 09/930,971

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February 17, 2005



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